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# Koppers Co., Pittsburgh- Shears for Continuous Casting Lines

A. C. Marsters

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MORGAN CONSTRUCTION CO.  
MEMORANDUM

TO: As Noted

DATE: 7 June 1963

FROM: A. C. Marsters

SUBJECT: Koppers Co., Pittsburgh  
Shears for Continuous Casting Lines  
See WHH call report 28 May and 5 June 1963

On 6 June, WHH and ACM called on T. Lewis to develop more detail on this project. The Koppers engineer in charge of designing the continuous casting lines also attended.

Following are basic requirements, in brief form, taken from call reports and 6 June visit.

1. Four installations are on order or about to be ordered; one 2-strand, two 3-strand and one 4-strand. Center distances are 36" for 2 and 3 strand units. Center distances for 4-strand unit is same except that there will probably be 42" between inner two strands.
2. Each strand is entirely independent throughout.
3. All installations for 2" x 2" through 6" x 6" min. cut length 3'-8" in all sections, speeds 8 FPM (6"x6")/20 FPM (2"x2").
4. No high carbon or alloys.
5. Present system of torch cutting costs about \$18,000 per strand, requires operator, gives constant trouble and leaves bad ends.
6. All hands agreed that billet should be stopped for dividing. It appears that leveling roll unit ahead of shear would do this. That is their worry, so let's assume it will. Length counting equipment can be (and apparently now is) incorporated in leveling roll assembly.
7. Billet will be on flat, not on corner, even though I gave learned dissertation on section moduli of billets on corner vs. on flat (following thorough semi-annual briefing by MM).
8. Creating gap is no problem.

	ACT	INF.
ALDEN		
BACKHOLM		
BAGDONOVICH		
BLETT		
B. CHARD		
BOYLAN		
BRUCE	X	
BURNS		
CARSON		
COMTOIS		
CORKUM, E.		
CRON		
CURRIE, E.		
DAVIS		
DONOHUE		
FONTAINE		
FLODINE		
ROSE Gilvar	X	
HALL		
HERMES		
HILL		
HITCHCOCK		
HOOKS		
HUTCHINGS		
JOHNSON, A.		
JOHNSON, WIN.		
KINNICUTT		
KNIGHT		
MARSTERS		
M. EEN		
McMILLEN		
MERCER		
MORGAN, M.	X	
MORGAN, P. B., JR.		
MORGAN, PA. S.		
MORGAN, PE. S.		
MORGAN, P.M.	X	
MORGAN, W.		
MURRAH	X	
MURRAY		
NEILSON		
PALMER		
PITTSBURGH OFFICE	X	
XXX H. Wood	X	
RECEPTIONIST		
RICKLEY		
SARGENT		
SCOTT		
SHORE		
SIBLEY		
SIEURIN	X	
TAPPIN		
TEL. OPERATOR		
WEBER		
W. NGTON		
W. ON		
WRIGHTSON		
YOUNG		
GEN. FILE		X



9. These jobs cannot stand the cost of separate U&D shears (#5) for each strand. They are more capable of absorbing the lower cost of some double shear arrangement such as at A. C. O. A. although even that is probably too much money.

I suggest the following approach to this problem:

First, give some serious thought to any alternative shear design (hydraulic?) which would offer appreciable cost savings. Concurrently, develop the actual requirements for a twin U&D shear as on 80380 but designed to handle sections up to 6 x 6 (D. S. is doing this).

Price the twin U&D arrangement on a quantity basis. If we come up with alternate shear design, price on same basis.

Within two weeks, determine whether we have anything worth pursuing and advise customer. I requested about three weeks for a thorough analysis of problem but stated that we should know where, if anywhere, we are going in two weeks.

WHH and ACM agree that this could develop into some worthwhile business if the price can be kept within bounds. The physical limitations are not confining; the operational requirements are very flexible; we have the advantage of up to twelve units over which to absorb development charges.

It is worth some time and effort but must be tackled now if we are seriously interested. Either we give it prompt and concentrated attention or drop it.

A. C. Marsters

P. S. Manco Mfg. Co. have a hydraulically operated shear which will cut 4-1/2" squares, has a cutting cycle of 10 seconds and weighs 1,100 lbs. If we double the weight to go from 4-1/2" squares to 6" squares, double it again to reduce the cutting cycle and then ~~double~~ the whole thing for safety, we still have considerably less than 10,000 lbs. This is peanuts compared with a #4 U&D shear, forgetting the drive. AWJ gives the weight of a #5 U&D as at least four times this figure.

Pounds are **dollars!** Even if the above comparison is far off the mark, the difference would still seem to be substantial.